Health Information Technology Blue Ribbon Task Force
Carson City, NV
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Developing a Feasible and Sustainable Health Information Infrastructure

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"The development of an information technology infrastructure has enormous potential to improve the safety, quality, and efficiency of health care in the United States"

- Institute of Medicine, *Crossing the Quality Chasm*, 2001

Key Points

I. Goal: comprehensive electronic patient information when & where needed

II. Challenges
- Making information electronic
- Stakeholder cooperation
- Financial sustainability
- Public trust (privacy)

III. Health record banks successfully address all the challenges

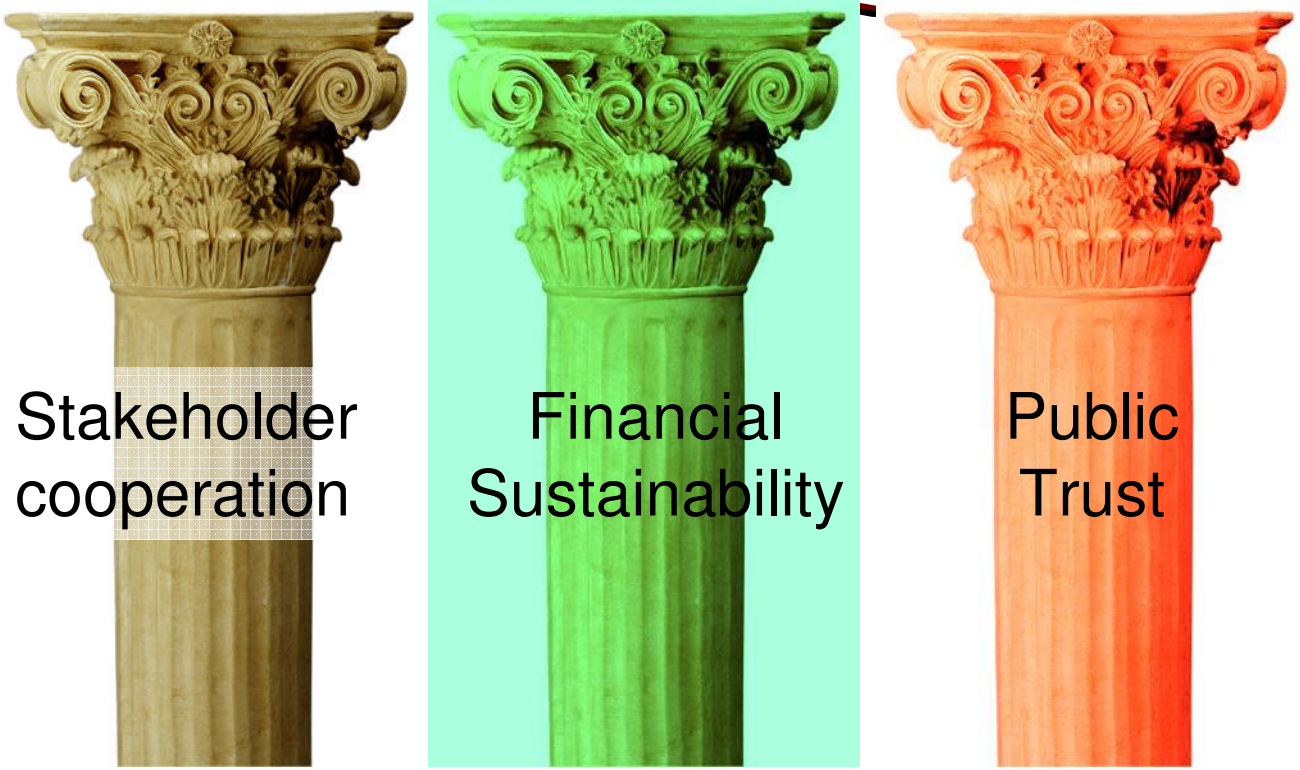
IV. Next Steps

I. Goal: Comprehensive Electronic Patient Information When and Where Needed

- All medical records must be electronic
- Combine multiple scattered records into complete "master" record
- Enable rapid review
  - Graphs
  - Charts
  - Enhancement of relevant information
- Automated reminders to improve quality and reduce errors

II. Challenges of a Community Health Information Infrastructure

Complete Electronic Patient Information



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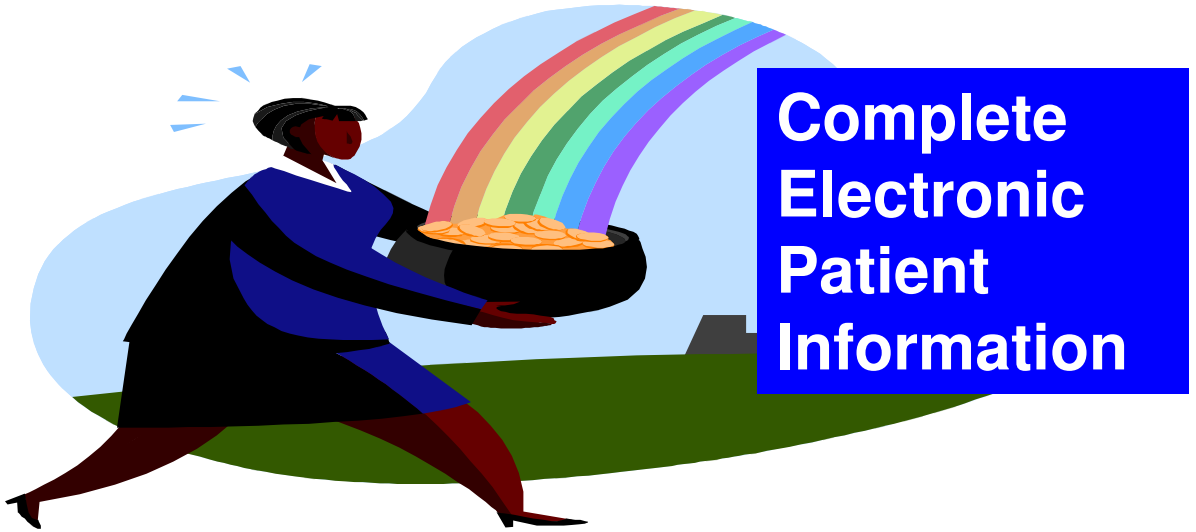

- Most information is already electronic: Labs, Medications, Images, Hospital Records
- Outpatient records are mostly paper
  - Only 10-15% of physicians have EHRs
  - Business case for outpatient EHRs weak

✓ **Requirement #1**: Provide financial incentives to create good business case for outpatient EHRs

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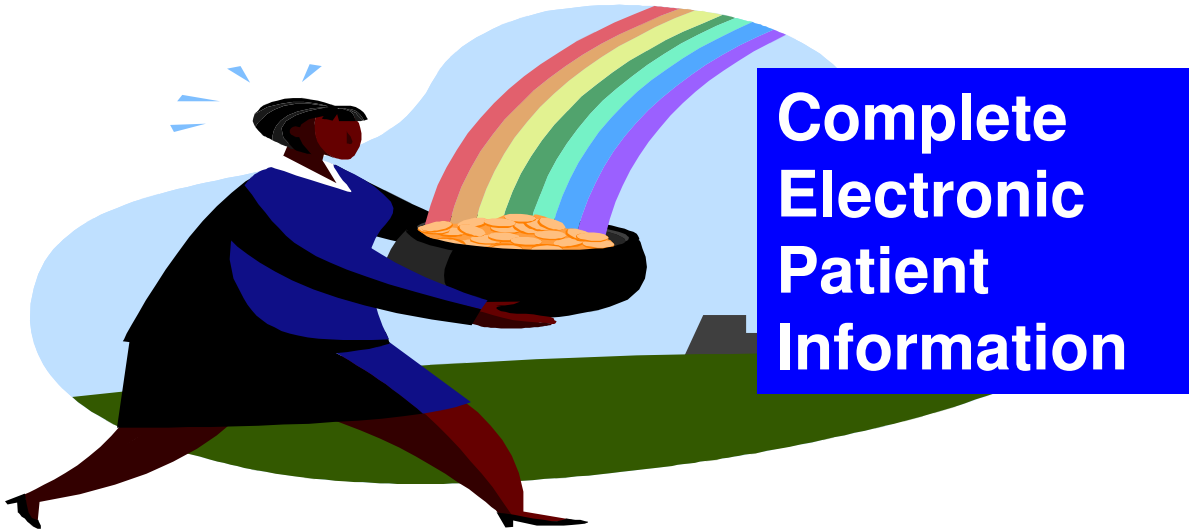
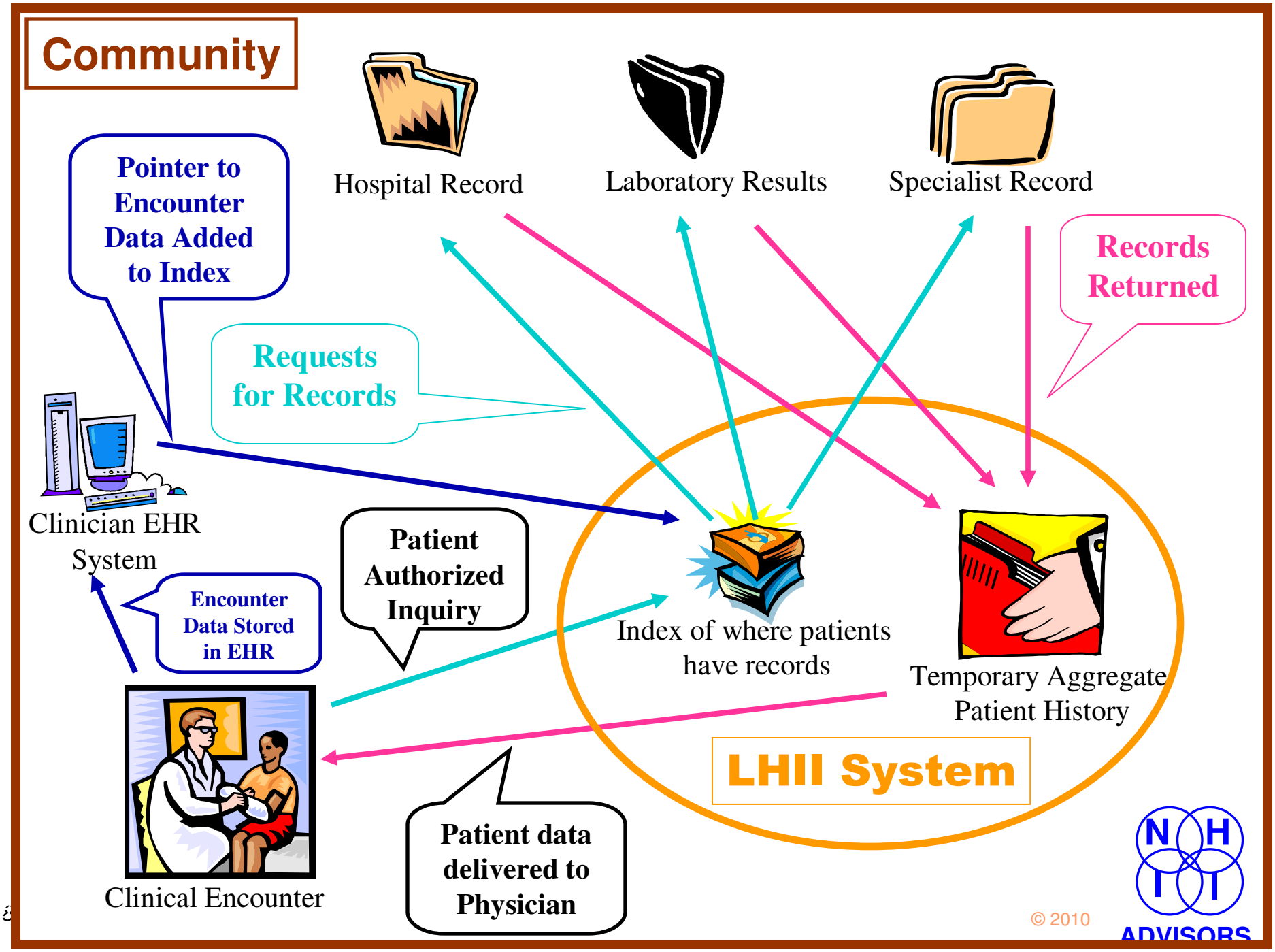


- Need single access point for electronic information
- Option 1: Gather data when needed (scattered model)
  - Pro: 1) data stays in current location; 2) no duplication of storage
  - Con: …


Community
Hospital Record
Laboratory Results
Specialist Record
Pointer to Encounter Data Added to Index
Requests for Records
Records Returned
Clinician EHR System
Patient Authorized Inquiry
Encounter Data Stored in EHR
Index of where patients have records
Temporary Aggregate Patient History
LHII System
Clinical Encounter
Patient data delivered to Physician
© 2010
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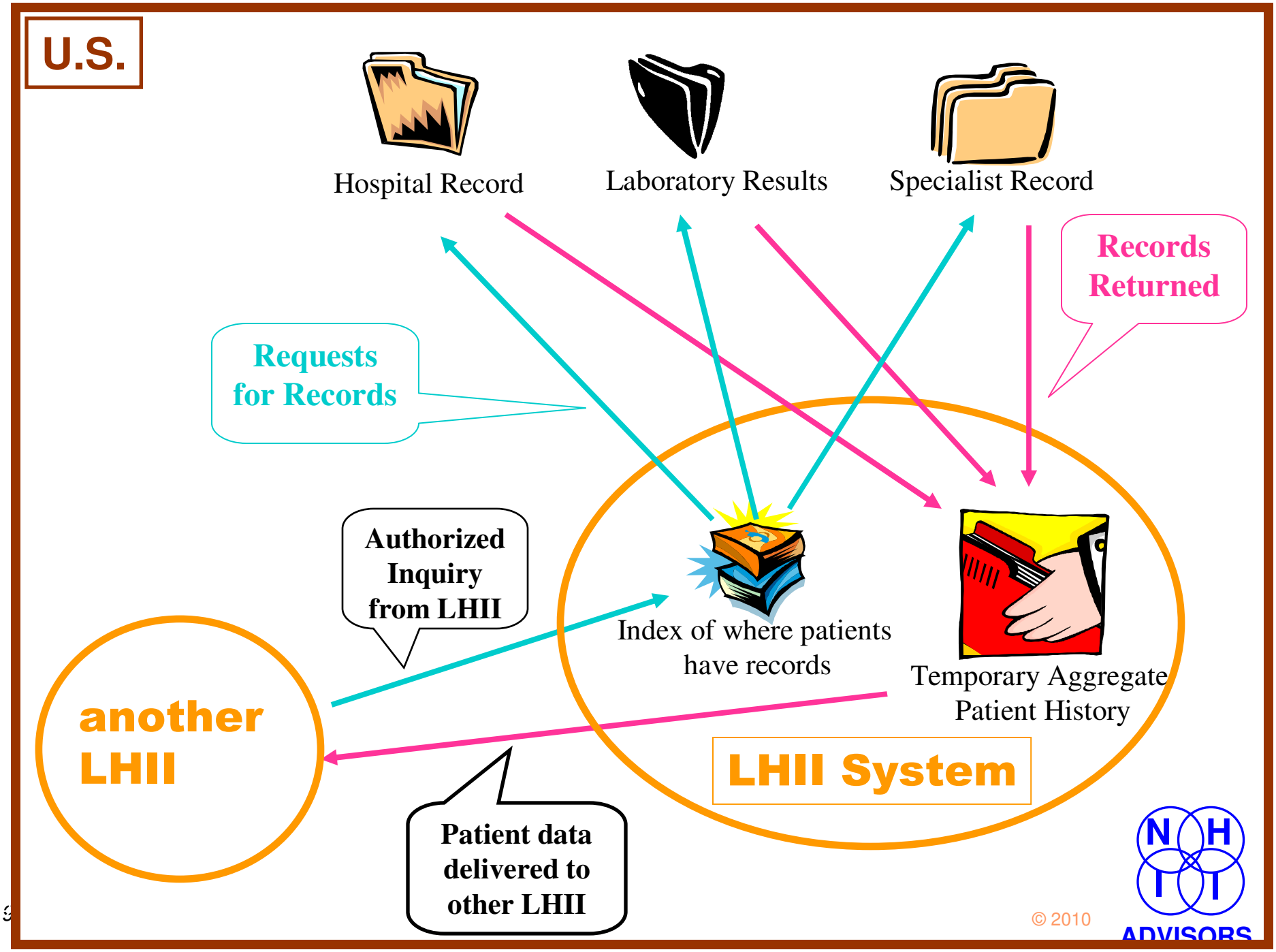

U.S.
Hospital Record
Laboratory Results
Specialist Record
Records Returned
Requests for Records
Authorized Inquiry from LHII
Index of where patients have records
Temporary Aggregate Patient History
another LHII
LHII System
Patient data delivered to other LHII

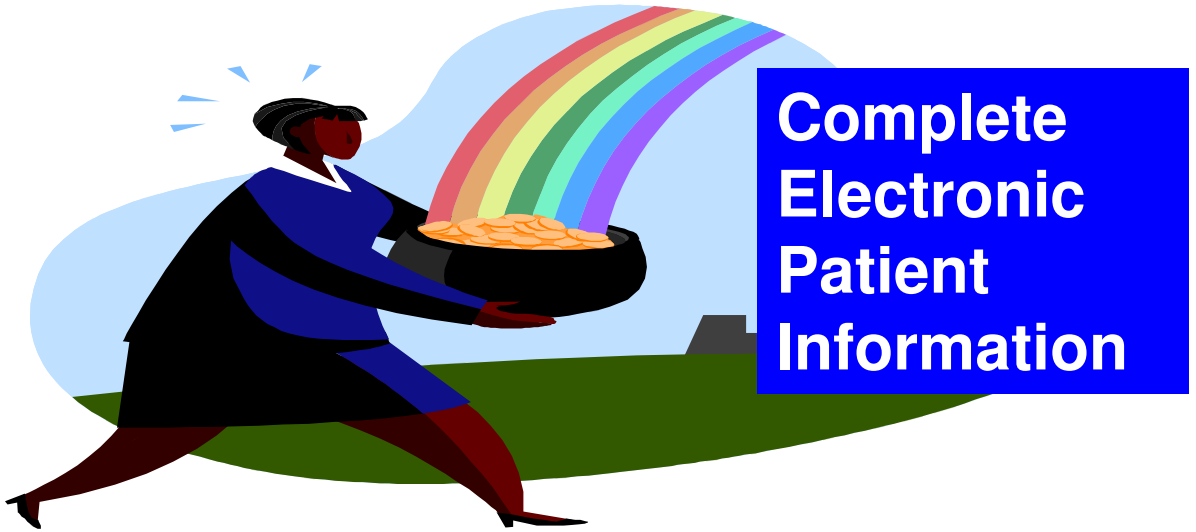
Problems with scattered data model for community HII

- All health information systems must have query capability (at extra cost)
  - Organizational cooperation challenge (especially for physicians)
  - Maintaining 24/7 availability with rapid response time will be operationally challenging (& costly)
- Searching patient records is sequential (e.g. for research & public health)
- Where is financial alignment & sustainability?

Examples of Community HII

Name	Data Storage
Spokane, WA	Central
South Bend, IN	Central
Indianapolis, IN	Central
Fishkill, NY	Central
Bellingham, WA	Central
Cincinnati, OH	Central

Number of operational community HII systems using scattered model: NONE



- Need single access point for electronic information
- Option 1: Gather data when needed (scattered model)
  - Pro: 1) data stays in current location; 2) no duplication of storage
  - **Con: 1) all systems must be available for query 24/7; 2) each system incurs added costs of queries (initial & ongoing); 3) slow response time; 4) searching not practical; 5) huge interoperability challenge (entire U.S.); 6) records only complete if every possible data source is operational**

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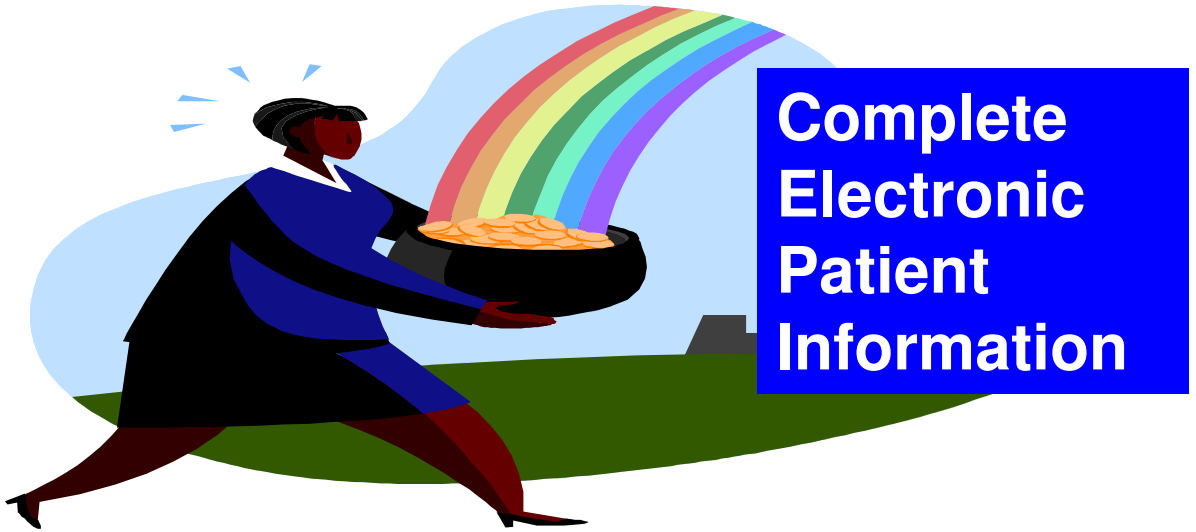

- Need single access point for electronic information
- Option 2: Central repository
  - Pro: fast response time, no interoperability between communities, easy searching, reliability depends only on central system, security can be controlled in one location, completeness of record assured, low cost
  - Con: public trust challenging, duplicate storage (but storage is inexpensive)

✓ Requirement #2: Central repository for storage

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- Voluntary ➡ Impractical
- Financial incentives
  - Where find $$$$$?
- Mandates
  - New ➡ Impractical
  - Existing
    - HIPAA requires information to be provided on patient request

✓ **Requirement #3: Patients must request all information**

Funding options

- Government
  - Federal: unlikely
  - State: unlikely
  - Startup funds at best
- Healthcare Stakeholders
  - Paid for giving care
  - New investments or transaction costs difficult
- Payers/Purchasers
  - Skeptical about benefits
  - Free rider/first mover effects
- Consumers
  - 72% support electronic records
  - 52% willing to pay >=$5/month

✓ **Requirement #4: Solution must appeal to consumers so they will pay**

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A. Public Trust = Patient Control of Information

- Consumers already control information in their records (13-17% admit "information hiding")
- Without control, too many will opt out OR politically force system to shut down
- Choices are today's system or consumer control -- complete information without consent is not (and should not be) a viable option

✓ **Requirement #5: Patients must control all access to their information**

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B. Trusted Institution

- Via regulation (like banks) ➡ impractical (?)
- Community supervision
  - Community non-profit oversight
  - Include all key stakeholders (especially consumers)
  - Review regular privacy & security audits
  - Open & transparent

✓ **Requirement #6: Governance by community non-profit that includes all stakeholders**

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C. Trustworthy Technical Architecture

- Prevent large-scale information loss
  - Searchable database offline
  - Carefully screen all employees
- Prevent inappropriate access to individual records
  - State-of-the-art computer security
    - Strong authentication
    - No searching capability
    - Secure operating system
  - Easier to secure central repository: efforts focus on one place
- **Requirement #7**: Technical architecture must prevent information loss and misuse

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III. Solution: Health Record Bank (HRB)

- Secure community-based repository of complete health records
- Access to records completely controlled by patients (or designee)
- "Electronic safe deposit boxes"
- Information about care deposited once when created
  - Required by HIPAA
- Allows EHR incentives to physicians to make outpatient records electronic
- Operation simple and inexpensive

What is a Health Record Bank?

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Health Record Bank Operation

Clinician's Bank

Encounter Data sent to Health Record Bank

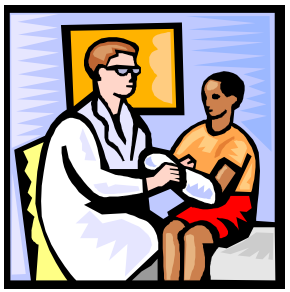
Patient data delivered to Clinician

SECURE PATIENT HEALTH DATA FILES

optional payment

Clinician EHR System

Encounter Data Entered in EHR



Clinical Encounter

YES

Patient Permission?

NO

DATA NOT SENT

Health Record Bank

Clinician Inquiry

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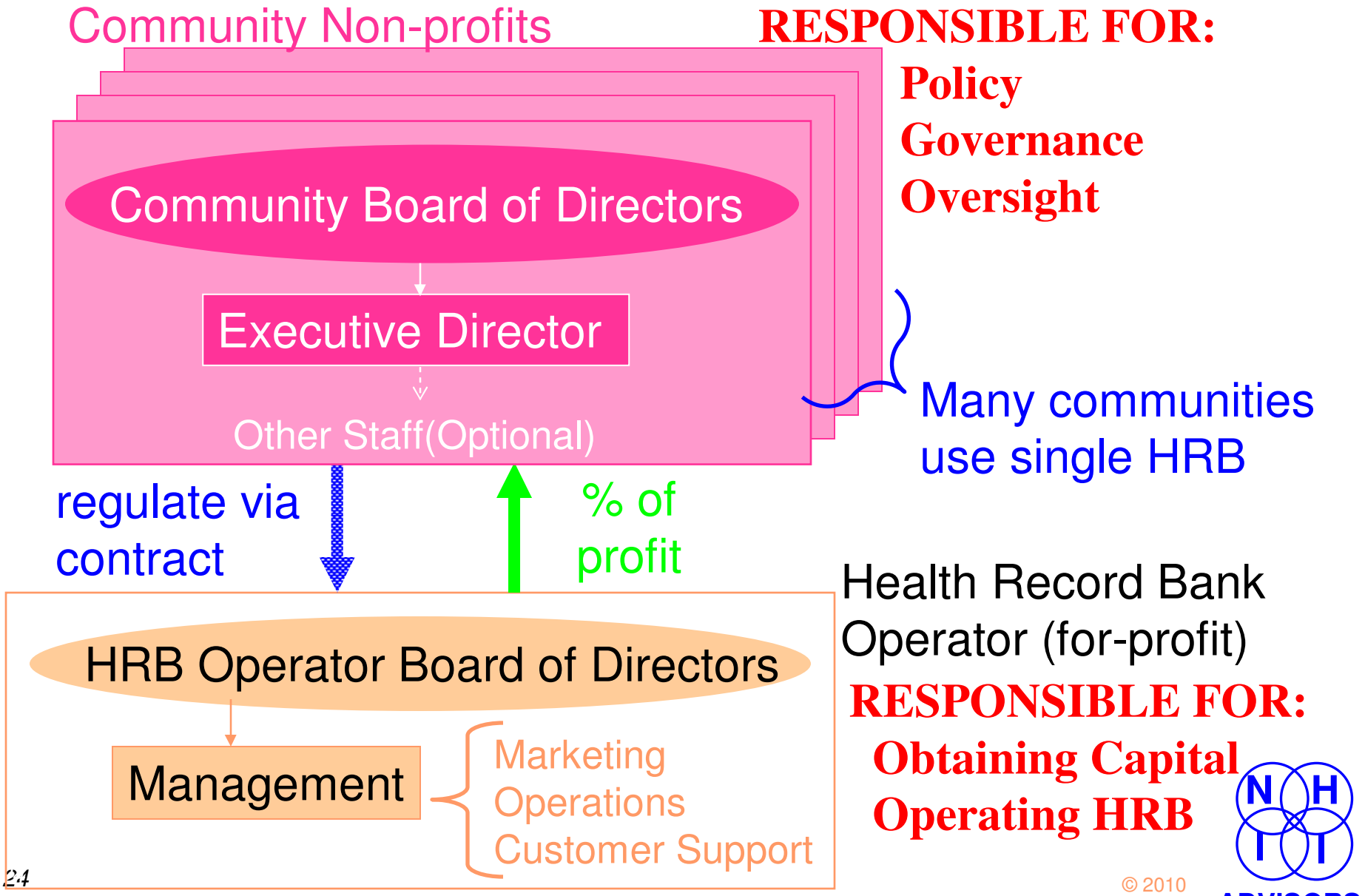
HRB Rationale

- Operationally simple
  - Records immediately available
  - Deposit new records when created
  - Enables value-added services
  - Enables research queries
- Patient control ➡
  - Trust & privacy
  - Stakeholder cooperation (HIPAA)
- Low cost facilitates business model
- Creates EHR incentive options
  - Pay for deposits
  - Provide Internet-accessible EHRs

HRB Business Model

- Costs (with 1,000,000 subscribers)
  - Operations: $6/person/year
  - EHR incentives: $10/person/year
- Revenue
  - Advertising: $6/person/year (option to opt out)
  - Reminders & Alerts: >= $12/person/year
    - "Peace of mind" alerts
    - Preventive care reminders
    - Medication reminders
  - Queries: ?
- No need to assume/capture any health care cost savings (!!)

Health Record Bank Organization



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Patient Identification in an HRB

- HRB assigns unique identifier upon enrollment
  - Patients provide known current identifiers for each prior site of care (to link to their account)
- Each HRB deposit automatically matched with a patient account
  - If match fails, human review determines correct account
  - New site of care identifier linked to HRB account
  - Reviews need not be real time
- Patients alert HRBs to errors in their accounts
- If HRB unique identifier compromised, replacement can be issued

IV. Next Steps

- Community non-profit (community partner for HRB)
  - Healthcare stakeholders & consumers
  - Linkage to community and oversight
    - Supervise privacy and security audits
- Establish agreement with HRB Provider
- Implement HRB
  - Free EHRs for physicians
  - Profit allocation for community partner
  - Profit allocation for data partners
- NHII Advisors ready to help

HRBs Solve the Key Problems

- Making Information Electronic
  - Business model provides free EHRs for physicians
- Stakeholder Cooperation
  - Patients request data ➡ all stakeholders must provide it (by law)
  - HRB profit allocations to data partners
- Privacy
  - Patient control ➡ each person sets their own privacy policy
- Financial Sustainability
  - New compelling value for patients ➡ ~$20/person/year recurring revenue

Questions?

For more information:

www.ehealthtrust.com

www.healthbanking.org

www.yasnoff.com

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